B2

3. (Amended) A spectrometer according to claim 1, wherein the spectrometer includes interfacing means for transporting, or allowing the transport of ions from a sample to the acceleration means.

B3

14. (Amended) A method of time of flight spectrometry for measuring characteristics of the m/z of ionized particles, the method comprising:

releasing said ionized particles from a sample;

accelerating said particles along two paths;

measuring the times of arrival of the particles at two points, one on each respective path, at differing distances from said sample, wherein the measuring includes intercepting at least a first portion of the particles on one path at a focal point and permitting a second portion of the particles to continue past the focal point; and

measuring the differences or average differences in arrival times of corresponding particles at said points to enable said m/z characteristics to be determined.

15. (Amended) A method of time of flight spectrometry for measuring characteristics of the m/z of ionized particles, the method comprising:

releasing said ionized particles from a sample;

accelerating said particles along two paths, in which both of said paths are contained in a single particle beam, with one path running alongside, but stopping short of, the other;

measuring the times of arrival of the particles at two points, one on each respective path, at differing distances from said sample; and

measuring the differences or average differences in arrival times of corresponding particles at said points to enable said m/z characteristics to be determined.

sub D' B4

17. (New) A time of flight mass spectrometer for measuring the m/z of ionized particles, the spectrometer comprising:

an ion source for generating the ionized particles;

an accelerator for accelerating the ionized particles to form an ion beam;

D1 B4 Cont'd

first and second detectors for detecting at least some of the ionized particles from the ion beam; and

a first reflectron for reflecting at least some of the ionized particles towards the second detector, wherein the first reflectron is disposed between the first and second detectors, and wherein the second detector is positioned so as to intercept at least a first portion of the reflected ionized particles and to permit a second portion of the reflected ionized particles to pass.

18. (New) The spectrometer of claim 17 wherein the second detector is positioned at a focal point where a first ionized particle overtakes a second ionized particle of lower velocity.

19. (New) The spectrometer of claim 18 wherein the second detector is a multi-element detector.

20. (New) The spectrometer of claim 17 further comprising a trapping cell for decoupling an extraction time of at least some of the ionized particles from a timing associated with the spectrometer, wherein the trapping cell is operable to delay the trapped ionized particles before the trapped ionized particles are accelerated.

21. (New) The spectrometer of claim 17 further comprising:

a third detector; and

a second reflectron, wherein the second reflectron is disposed between the second and third detectors.

22. (New) The spectrometer of claim 21 further comprising an ion gate positioned between the first and second reflectrons.

Sub D2

23. (New) A method for measuring the m/z of ionized particles using a time of flight spectrometer, the method comprising:

generating the ionized particles;

D2
B4
Cont'd

accelerating the ionized particles to form an ion beam;

reflecting at least some of the ionized particles from the ion beam towards at least one of a first and second detector;

detecting at least some of the ionized particles with the first and second detectors, wherein the detecting includes intercepting at least a first portion of the reflected ionized particles with the second detector and permitting a second portion of the reflected ionized particles to continue past the second detector; and

calculating the m/z of at least some of the detected ionized particles.

24. (New) The method of claim 23 further comprising delaying at least some of the ionized particles before the ionized particles are accelerated.

25. (New) The method of claim 23 further comprising selecting parent ions for fragmentation.

REMARKS

Claims 1-25 are pending. Applicant notes with appreciation the conditional allowance of claim 15. Claims 1, 3, 14, and 15 have been amended. A marked-up version of the amended claims is attached pursuant to 37 CFR § 1.121. New claims 17-25 have been added.

Rejections under 35 U.S.C. § 112

Claims 3 and 15 stand rejected under § 112, second paragraph. Claims 3 and 15 have been amended to more clearly identify the subject matter of the claims. These clarifying amendments simply make express what had been implicit in the claims as originally worded and therefore are not narrowing amendments that would create any type of prosecution history estoppel.